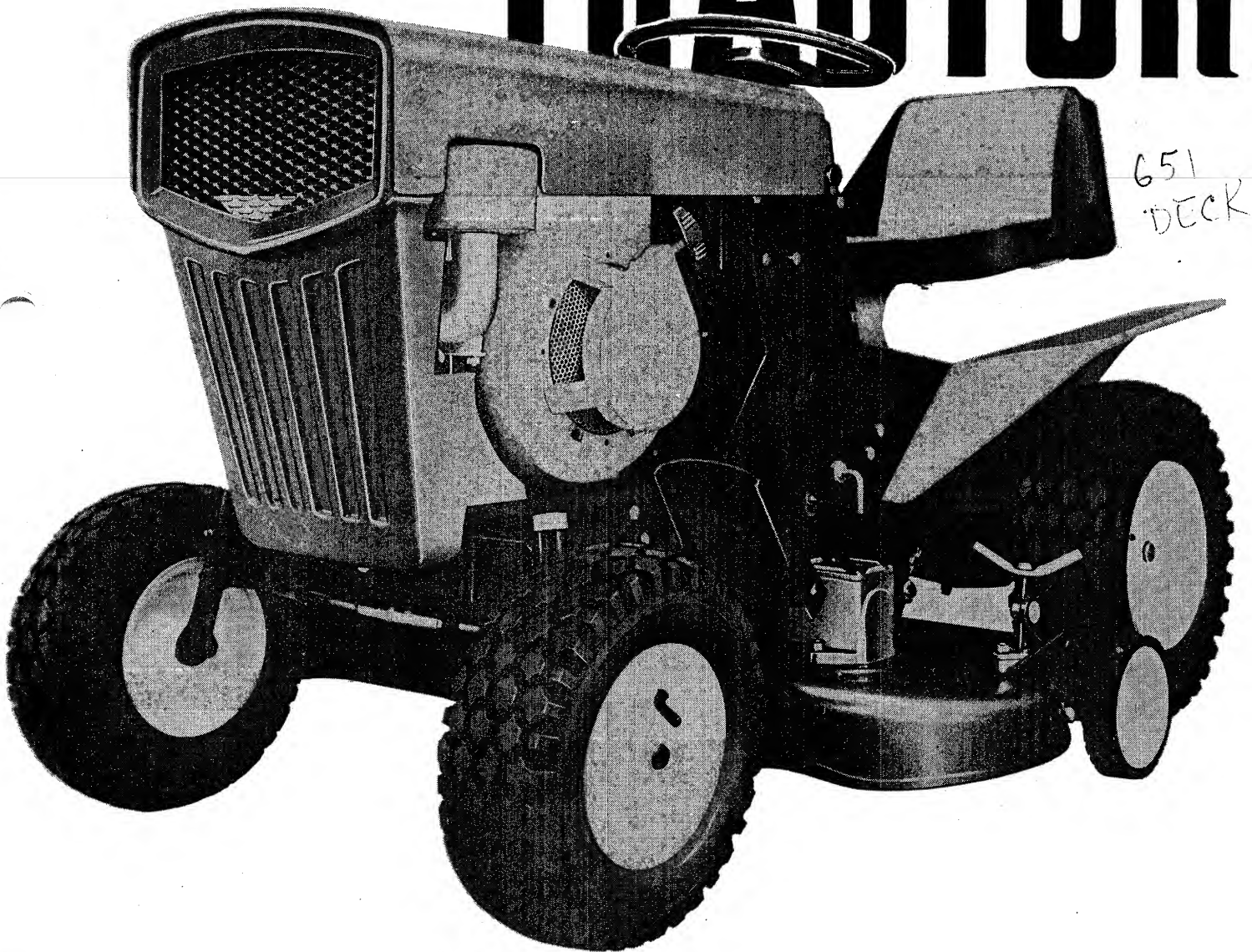


GARDEN TRACTOR



MODELS
148-650-148-659
148-655-148-658
148-660-148-669
148-665-148-668



- WHEEL BRAKES
- AUTOMOTIVE STEERING
- 3 FORWARD SPEEDS and REVERSE

MTD PRODUCTS INC • 5389 WEST 130th ST. • P. O. BOX 2741 • CLEVELAND, OHIO 44111

FORM NO. 770-1331

WARRANTY

For one year from date of purchase, MTD Products Inc. will replace for the original purchaser, free of charge, F.O.B. factory or authorized service firm, any part or parts found to be defective in material or workmanship. All transportation charges on parts submitted for replacement under this warranty must be paid by the purchaser. This warranty does not include replacement parts which become inoperative through misuse, excessive use, accident, neglect, improper maintenance or alterations by unauthorized persons. This warranty does not include the engine, motor, battery, battery charger or any component parts thereof. For service on these units refer to the applicable manufacturer's warranty.

The above warranty will apply only to the original owner and will be effective only if the warranty card has been processed. It will not apply where the unit has been used commercially.

Warranty service is available through your local authorized service dealer or distributor.

UNDER NO CIRCUMSTANCES WILL THE RETURN OF A COMPLETE UNIT BE ACCEPTED BY THE FACTORY UNLESS PRIOR WRITTEN PERMISSION HAS BEEN EXTENDED.

MODEL IDENTIFICATION

- 148-650 — Standard Model
- 148-655 — Standard Model with 18.00 x 9.50 Terra Tires
- 148-660 — Standard Model with key ignition starter, 12-volt battery and Delco-Remy Starter/Generator complete with Stewart Warner ammeter
- 148-665 — Same as 148-660 with 18.00 x 9.50 Terra Tires

SPECIFICATIONS

| Cutting Width | Over All Height | Over All Width W/Mower | Over All Width W/O Mower | Turn Radius Inside | Over All Length | Weight | Tires — Rear | Tires — Front |
|---------------|-----------------|------------------------|--------------------------|--------------------|-----------------|----------|---|---------------------------|
| 32" | 32" | 34" | 29" | 24" | 54" | 320 lbs. | Standard 16.00 x 6.50 Pneumatic Terra Tires 18.00 x 9.50 Pneumatic | 12.50 x 4.50 Pneumatic |

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SAFETY TIPS FOR GARDEN TRACTORS AND ATTACHMENTS

Improper use of riding lawn mowers, garden tractors and attachments on the part of the operator can result in injury. To reduce this possibility, give complete and undivided attention to the job at hand.

1. Know the controls and how to stop quickly — **READ THE OWNER'S MANUAL.**
2. Do not allow children to operate machine; nor adults to operate it without proper instruction.
3. Clear work area of objects which might be picked up and thrown.
4. Disengage all clutches and shift into neutral before starting motor. Keep hands, feet and clothing away from power driven parts.
5. Do not carry passengers. Keep children and pets a safe distance away.
6. Never direct discharge of any material toward by-standers nor allow anyone near machine while in operation.
7. Disengage power to any attachment and stop motor before leaving operator position.
8. Take precautions when leaving machine unattended (to avoid accidental starting, rolling away, accidental dropping of any attachment, etc.).
9. Disengage power to any attachment whenever it is not in use or when traveling from one work area to another.
10. Stay alert for holes and hidden hazards.
11. Know what is behind you before backing up.
12. Beware of steep slopes; reduce speed on all side slopes and sharp turns to prevent tipping or losing control.
13. Don't stop or start suddenly when going uphill or downhill.
14. Use extra care when pulling loads or using heavy equipment. (Refer to your owner's manual.)
15. Watch out for traffic when near roadways.
16. Handle gasoline with care — it is highly flammable.
 - A. Use approved gasoline container.
 - B. Never add gasoline to running motor — fill tank out of doors and wipe up spilled gasoline.
 - C. Replace gasoline cap securely.
 - D. Open doors if motor is run in garage — exhaust gases are dangerous.
17. Keep machine in good operating condition and keep safety devices in place. Use guards as instructed in owner's manual.
18. Disengage power to any attachment and stop motor before making repairs or adjustments.

ASSEMBLY INSTRUCTIONS (Refer to Fig. 1)

BATTERY INSTRUCTIONS (Refer to Pg. 13)

Your tractor is completely assembled when you receive it. Add $2\frac{3}{4}$ pints of a high quality detergent oil (above 32° F use SAE 30W. Below 32° F use SAE 10W) to the crankcase and fill the gasoline tank with "regular gasoline." The tractor is shipped with all tires inflated to excessive pressure to protect the tractor during shipment. It is important to reduce the pressure to 15 psi before using the tractor.

CHOKE (Refer to Fig. 1)

The engine has a "choke-a-matic" choke. Move the throttle lever all the way up to place in the choke position. One lever operates the choke, regulates the engine speed and stops the engine.

LIFT LEVER (Refer to Fig. 1)

The lift lever is used to raise and lower the accessories such as the mower unit or snow blade in or out of position. To operate the lift lever, push forward slightly, depress the push cap on the top of the lever and move the lever either direction.

IMPLEMENT HITCH

(Refer to Fig. 1)

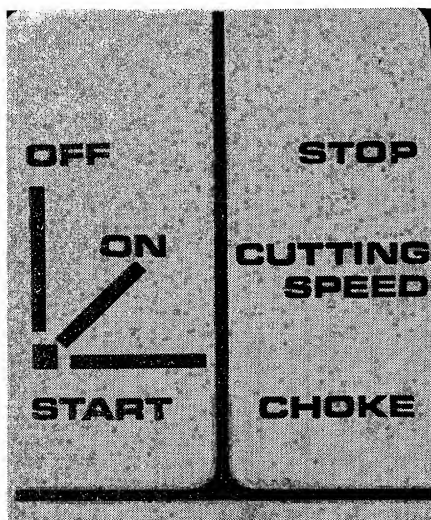
Universal fixed hitch.

GASOLINE TANK (Refer to Fig. 1)

May be filled without opening the hood. ONE GALLON CAPACITY.



GASOLINE GAUGE



THROTTLE CONTROL

PARKING BRAKE (Refer to Fig. 1)

The parking brake is located on the left side of the tractor. To set the parking brake depress the clutch-brake pedal as far as possible and turn the parking brake lever clockwise until it tightens and holds the clutch-brake pedal down. To release, turn the parking brake lever counter-clockwise one turn.

CLUTCH (Refer to Fig. 1)

The combination clutch and brake pedal can be operated with either foot or both by depressing the foot pedals. Depress all the way to declutch and brake. The clutch is operated by a V-Belt idler.

BRAKE (Refer to Fig. 1)

The brake is on the two rear wheels by means of a band that grips the transmission shaft. It is operated by depressing the Clutch-Brake Pedal all the way.

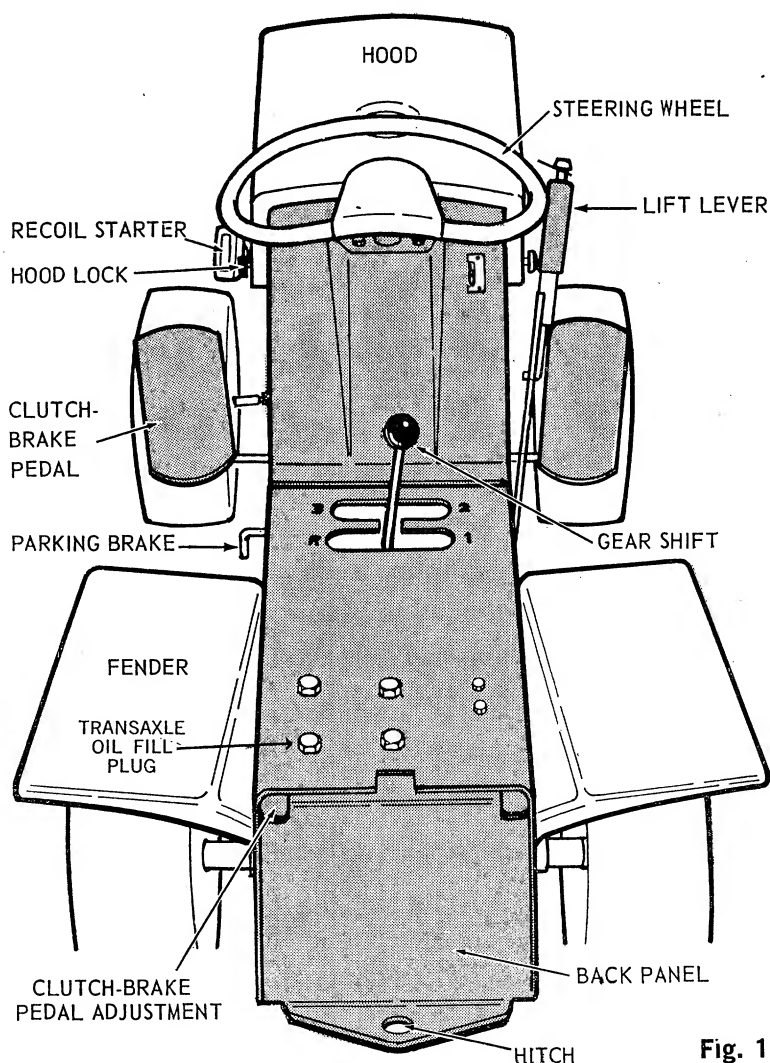


Fig. 1

TRANSMISSION (Refer to Fig. 2)

1st Gear . . . To climb steep hills, to hold back the tractor on downgrades and to pull heavy loads. **MAXIMUM SPEED 2 MPH.**

2nd Gear . . . **NORMAL GRASS CUTTING RANGE. MAXIMUM SPEED 4 MPH.**

3rd Gear . . . High speed for traveling with a light load over smooth surfaces. **MAXIMUM SPEED 6 MPH.**

Reverse Gear . . . To back up the tractor.

GEAR SHIFT LEVER (Refer to Fig. 2)

Three speeds forward and one in reverse. Do not shift gears while the tractor is in motion. Pick the gear to match the workload.

FUEL SHUT-OFF VALVE AND IN-LINE FUEL FILTER

The fuel shut-off valve is to be used when the tractor is being stored for a period of time.

The in-line fuel filter is the "throw away" type. Replace the entire filter as necessary by removing the spring clips on the fuel line with a pair of pliers.

TIRE PRESSURE

Front . . . 15 psi Back . . . 15 psi

Overinflation causes slippage of rear wheels and underinflation causes excessive wear or sometimes causes inner tube damage. Terra tire pressure 8 psi.

SEAT

Adjustable to four positions by removing the single hex nut under the seat spring and repositioning the seat and tightening the nut.

OPERATING YOUR TRACTOR

Your new tractor is a machine designed to eliminate the hard work connected with mowing grass and other maintenance around your yard. It is constructed of the highest quality materials throughout and will give you many years of useful service if given the proper maintenance and care. Your tractor is not a toy, but rather a useful machine and should not be used by anyone until they fully understand the operating instructions. The safety rules noted in the front of this manual should be observed at all times.

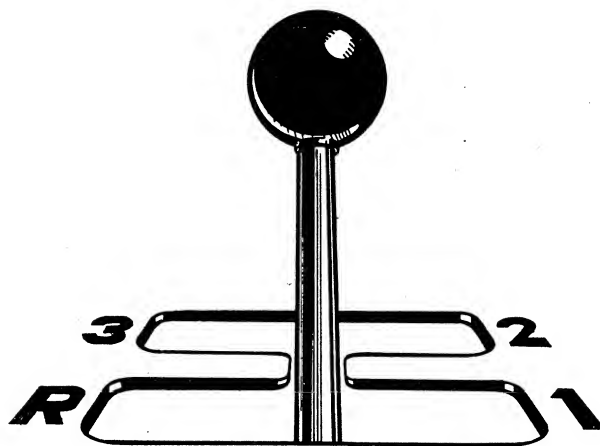


Fig. 2

A brief break-in period is necessary to insure maximum engine life. This consists of running the engine at half speed for a period of time required to use one tank of full gasoline. This is necessary on the initial run only. It is also recommended that the crankcase oil be changed after the first five hours of operation. This allows for the removal from the crankcase of any impurities which may have accumulated during the break-in period.

PRECAUTIONS

1. Do not fill the gasoline tank while the engine is running. Be careful not to spill gasoline on the engine.
2. Clean grass and leaves from the fins and air screen so the engine will not overheat.
3. Always remove the spark plug wire before making any adjustments or working on the unit. Turning the blade by hand can accidentally start the engine and cause injury if the sparkplug wire is connected.

TO START THE ENGINE — STANDARD MODEL

(For Electric Starter Models see Pages 13 & 14)

1. Check engine oil. Fill to *Full Mark* on dipstick.
2. Be sure fuel shut off valve is open and the sparkplug wire is connected.
3. Put gear shift lever in neutral.
4. Depress clutch-brake pedal. It may be held in position by tightening the parking brake.
5. Move the throttle lever to "Choke" position.
6. While seated on the tractor pull the starter rope with a quick steady motion with your left hand.
7. Slowly return the throttle lever to the running position after the engine has started.

PUTTING THE TRACTOR IN MOTION

1. Advance the throttle. When using the tractor for work loads, such as mowing or dozing, the engine should be running from $\frac{3}{4}$ to full throttle to prevent strain on the engine to operate equipment using the tractor engine as the source of power.

2. Depress the Clutch-Brake pedal completely and move the gear shift lever to an appropriate gear to match the workload. Be sure that the tractor is *NOT* in motion when you change gears.

3. Release the Clutch-Brake pedal and you will put the tractor in motion.

4. To stop the mower, move the throttle control to "STOP" position. The ignition is automatically grounded. Keep the throttle control in "STOP" position at all times when the tractor is not in use.

Lubrication & Maintenance

(Refer to Fig. 3)

1. *Engine* — See Engine Manual — Use high quality detergent oil. Above 32° F use SAE 30. Below 32° use SAE 10.
2. *Transaxle* — Use SAE 90 E.P. oil. Transaxle is lubricated with 2 pints of checking lubricant level add another pint of the above oil until it begins to overflow through the filler plug (Part No. 52 on Pg. 12). Maintain oil at this level. Oil can be added to the transaxle by removing the left rear bolt that holds the transaxle to the tractor frame and adding oil through this hole. (See Fig. 24.) The transaxle is shipped with two pints of SAE 90 EP Oil in it. Three pints will bring the oil level to the over flowing point of the oil fill plug as shown in Figure 27. Maintain the oil at this level.

GREASE FITTINGS

3. *Steering Pins* — Use automotive multi-purpose grease. Use hand or pressure type gun.

APPLY AUTOMOTIVE MULTI-PURPOSE TYPE GREASE TO THE FOLLOWING LOCATIONS.

4. Guide slot for steering segment.
5. Pinion gear for steering.
6. Mower unit pivot pin.
7. Steering pivot pin (turn steering to either side to lubricate bearing surface).
8. Front axle pivot bolt.

APPLY MACHINE OIL

TO THE FOLLOWING LOCATIONS.

9. Clutch-Brake Pedal pivot point.
10. Lift lever pivot point.
11. Idler pivot and idler arm.

The following items are permanently lubricated and require no additional lubrication.

1. All idler bearings.
2. Tie rod ends.
3. All wheel bearings.
4. All steering column bearings.

NEVER LUBRICATE OR PERFORM MAINTENANCE WHILE THE ENGINE IS RUNNING OR THE SPARKPLUG WIRE IS CONNECTED TO THE PLUG.

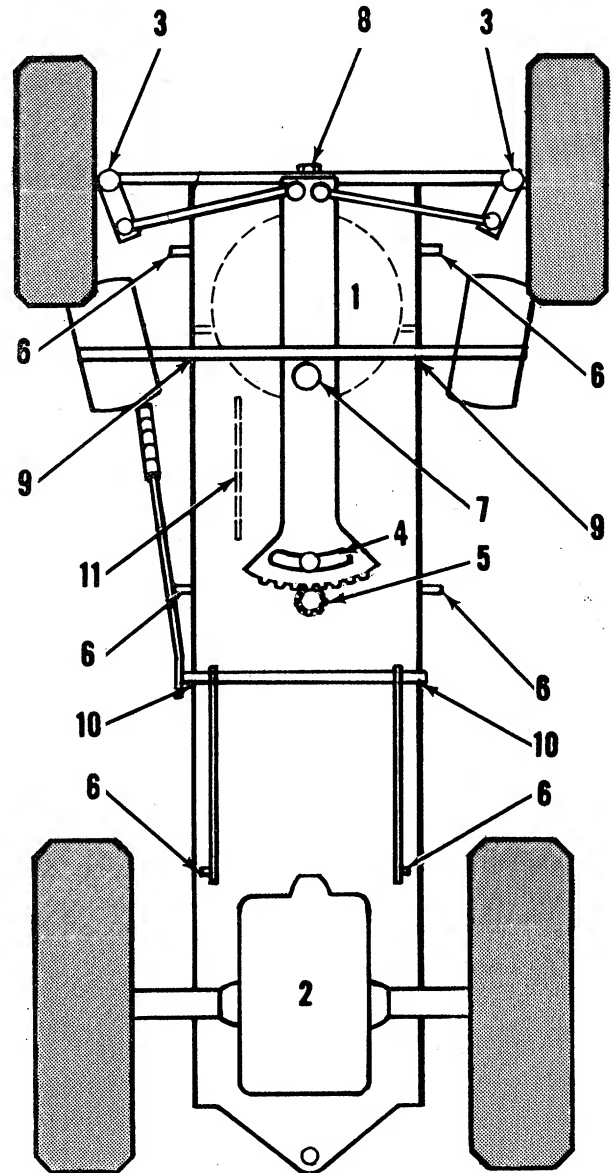


Fig. 3

| SCHEDULE OF LUBRICATION AND MAINTENANCE | SEE NOTE ON PAGE 6 | AFTER EVERY 24 HRS. OF OPERATION | ONCE EACH SEASON |
|---|--------------------|----------------------------------|------------------|
| Change Engine Oil | (1) | X | — |
| Replace Fuel Filter | (2) | — | X |
| Clean Air Filter | (1) | X | — |
| Clean and Gap Spark Plug | (6) | — | X |
| Change Transaxle Oil | (3) | — | X |
| Check Tire Pressure | (4) | X | — |
| Grease Fittings | (5) | X | — |
| Oil and Grease Points | | X | — |

- Notes:** 1. See Engine Manual.
2. Replace fuel filter once each season or as necessary.
 3. Drain from bottom plug. Fill and check oil level from plug on the front side of the transaxle.
 4. Front and Rear Tires 15 psi.
 5. Use hand or pressure type gun.
 6. Set plugs at .025.

ADJUSTMENTS

WHEEL ADJUSTMENT (Refer to Fig. 4 and Fig. 5)

The caster (forward slant of the kingpin) and the camber (tilt of the wheels out at the top) requires no adjustment. Automotive steering principles have been used to determine the caster and camber on the tractor. The front wheels should toe-in $\frac{1}{8}$ inch. To adjust the toe-in, loosen the hex jam nut, remove the elastic locknut, drop the tie-

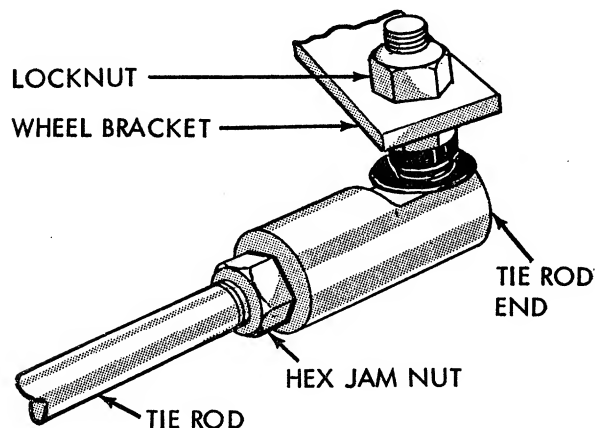


Fig. 4

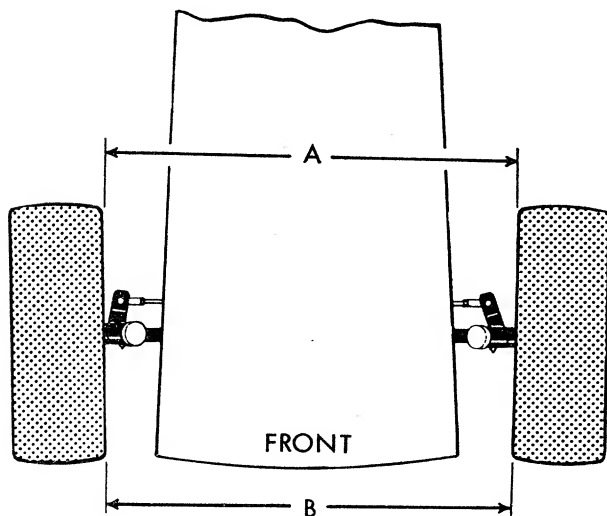


Fig. 5

rod end out of the hole in the steering arm and screw the tie-rod end in or out to make the adjustment (Fig. 4). The distance "B" must be less than "A" by $\frac{1}{8}$ inch (Fig. 5).

ENGINE

For engine adjustments see the engine manual.

WHEEL REMOVAL

- Front** . . . Loosen the set screw and remove the collar. The wheel pulls off by hand.
- Rear** . . . Remove the snap ring with Waldes Truarc Plier No. 4. The wheel pulls off by hand.

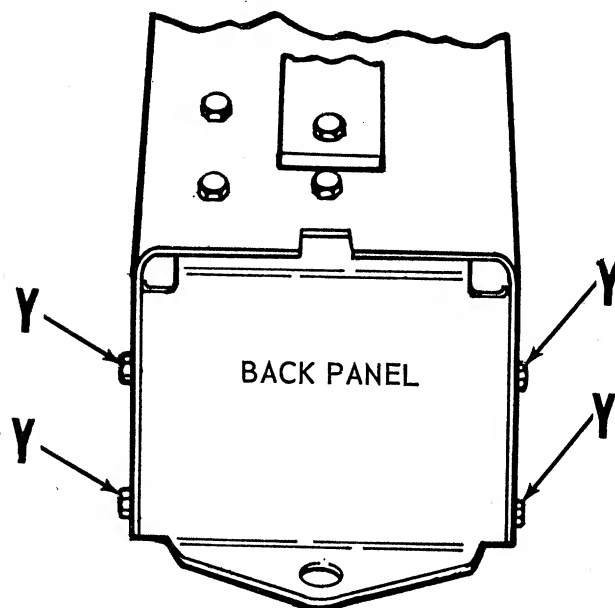


Fig. 6

CLUTCH-BRAKE PEDAL ADJUSTMENT

(Refer to Fig. 6 and Fig. 7)

To adjust the angle of the clutch-brake pedal, remove the cotter pin on the clutch rod and turn the clutch rod in or out of the ferrule to obtain the most comfortable angle of the pedal when the pedal is released. After making any adjustments be sure the belt guard does not rub on the belt.

The brake adjustment is made by using a deep well socket and a wrench and turning the adjusting nut through the opening on the back panel or by using a standard wrench and removing the hex bolts "Y" and removing the back panel.

The brake should be adjusted so that when the pedal is depressed completely the belt guard is *NOT* lower than the top edge of the engine pulley. Over-adjustment will cause excessive belt wear.

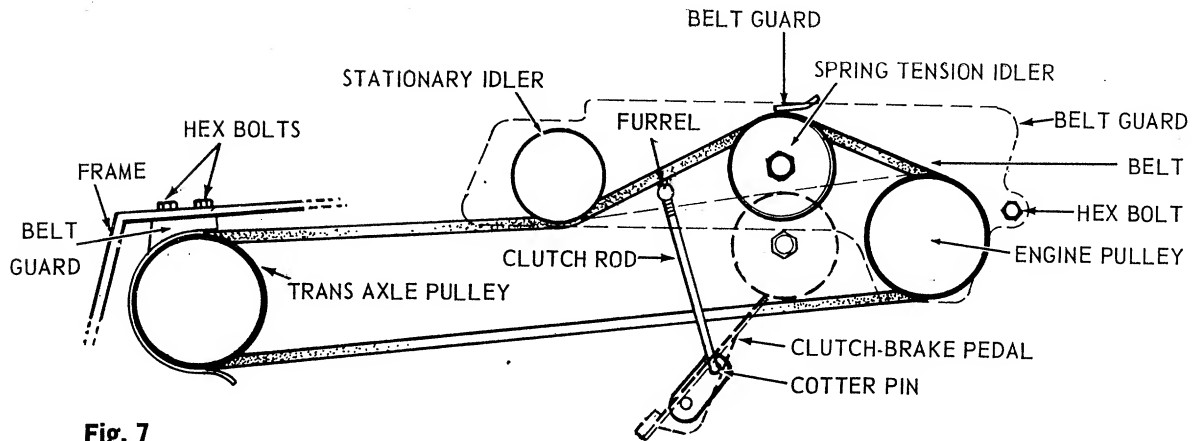


Fig. 7

ENGINE BELT REMOVAL (Refer to Fig. 6 and 7)

To remove the engine belt . . .

1. Remove the belt guard and the trap out assembly by removing the large hex bolt holding the belt guard in place. The belt guard can be pivoted out of the way.
2. Depress the Clutch-Brake pedal all the way and tighten the parking brake.
3. Remove the back panel and remove the two hex bolts on the right hand side of the frame under the seat and remove the rear belt guard.
4. Remove the hex nut on the spring tension idler and remove the belt guard and belt.
5. Replace belt and re-assemble.

STEERING ADJUSTMENT (Refer to Fig. 8)

The "play" or looseness of the steering can be adjusted by loosening the two hex bolts on the bracket and lightly tapping the bracket towards the front of the tractor. If the pinion gear becomes worn it can be rotated one half turn by removing the pin.

BELT ADJUSTMENT

The belts are automatically adjusted by the idlers.

STORAGE

1. Wash the tractor and remove all grass and dirt from the top of the mower and under the deck.
2. Lubricate and change oil in engine and transaxle.
3. Cover all unpainted metal parts, including the cutting edges of the blade, with a light coating of grease to prevent rust.
4. Place blocks under the frame to support the tractor so that the wheels do not touch the ground. Cover the wheels to protect from the light.
5. Drain the fuel from the tank, then run the engine until it runs out of fuel.
6. Remove the sparkplug and pour one ounce of clean engine oil into cylinder. Rotate the engine several times to distribute the oil. Leave the sparkplug wire disconnected.
7. Cover the tractor with a tarpaulin or similar cover.

To start the tractor after being stored, remove the sparkplug and crank the engine to remove excessive oil. Clean the sparkplug and replace it. Clean the air filter, fill tank with gasoline, check oil level, open the fuel shut off valve and then start your tractor.

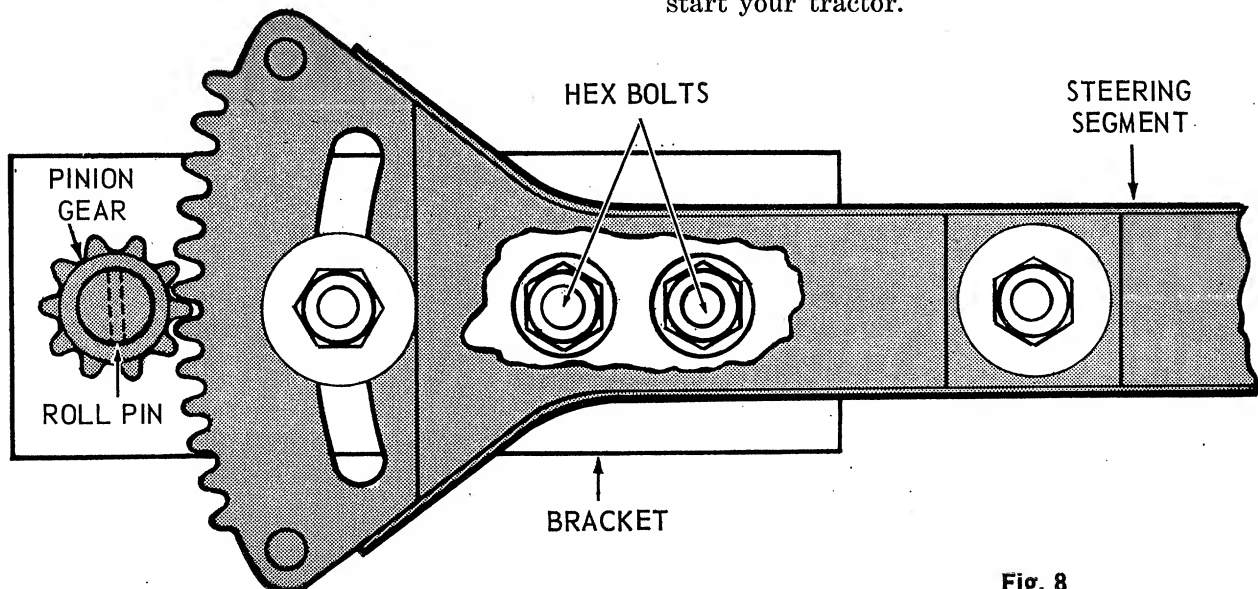
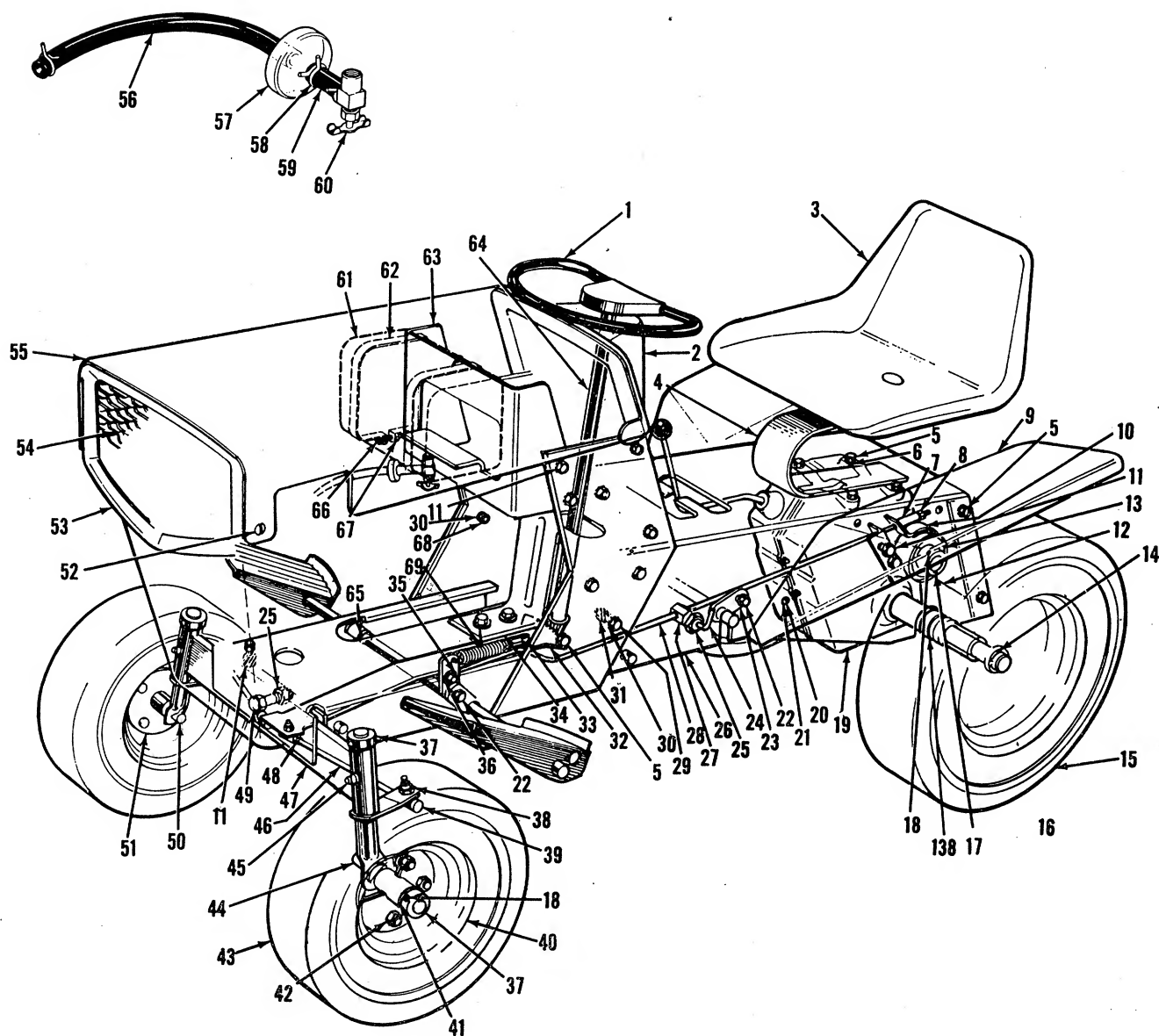


Fig. 8

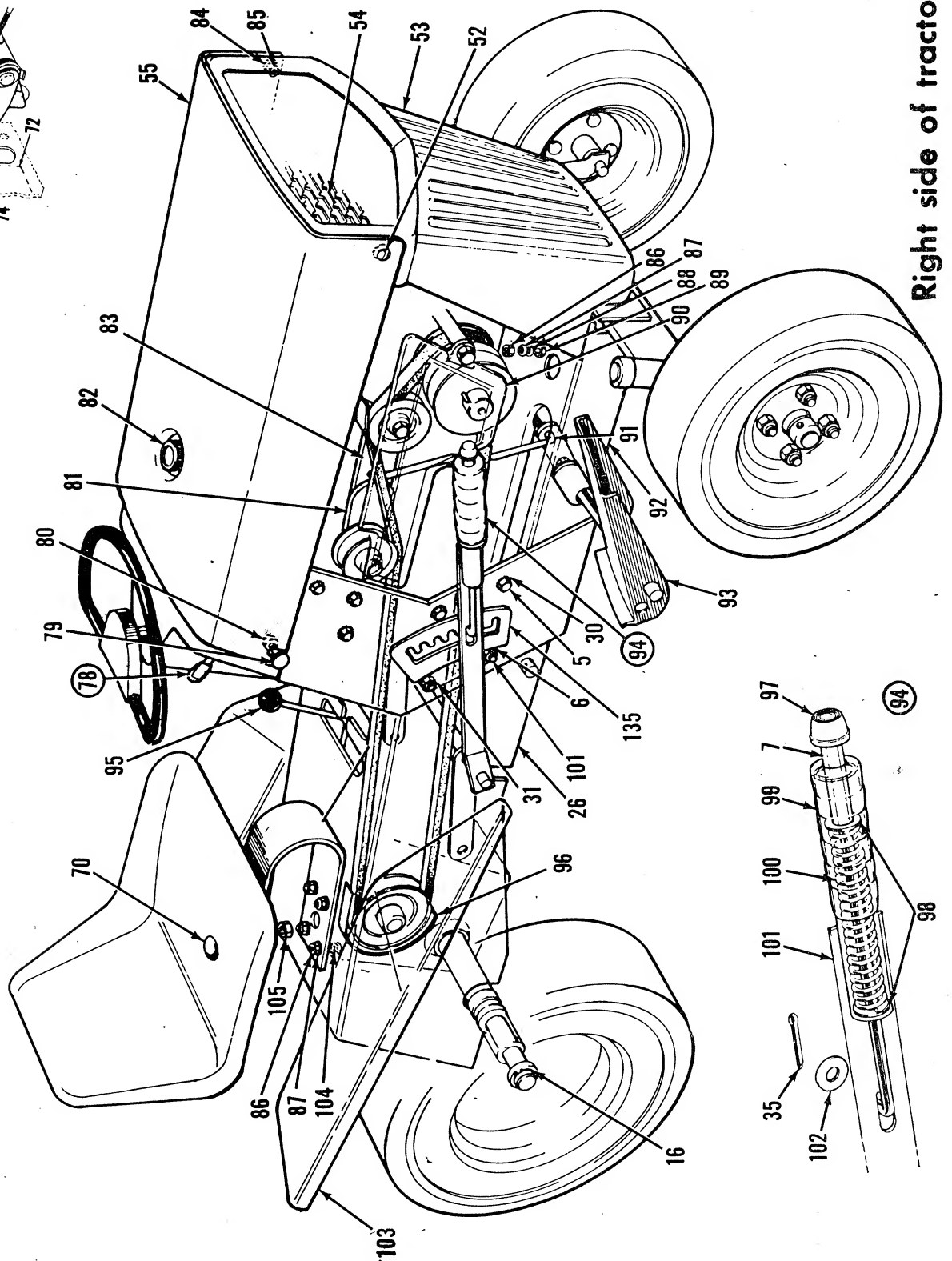
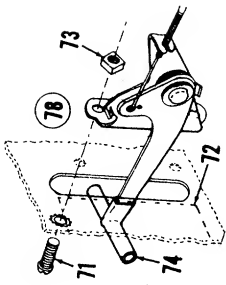
GARDEN TRACTOR

PARTS LIST FOR

MODELS NO. 148-650, 655, 660, 665, 659, 658, 669, 668



148-650, -655, -660, -665, -658, -659, -668, -669



Right side of tractor

PARTS LIST FOR GARDEN TRACTOR MODELS 148-650, 655, 660 AND 665

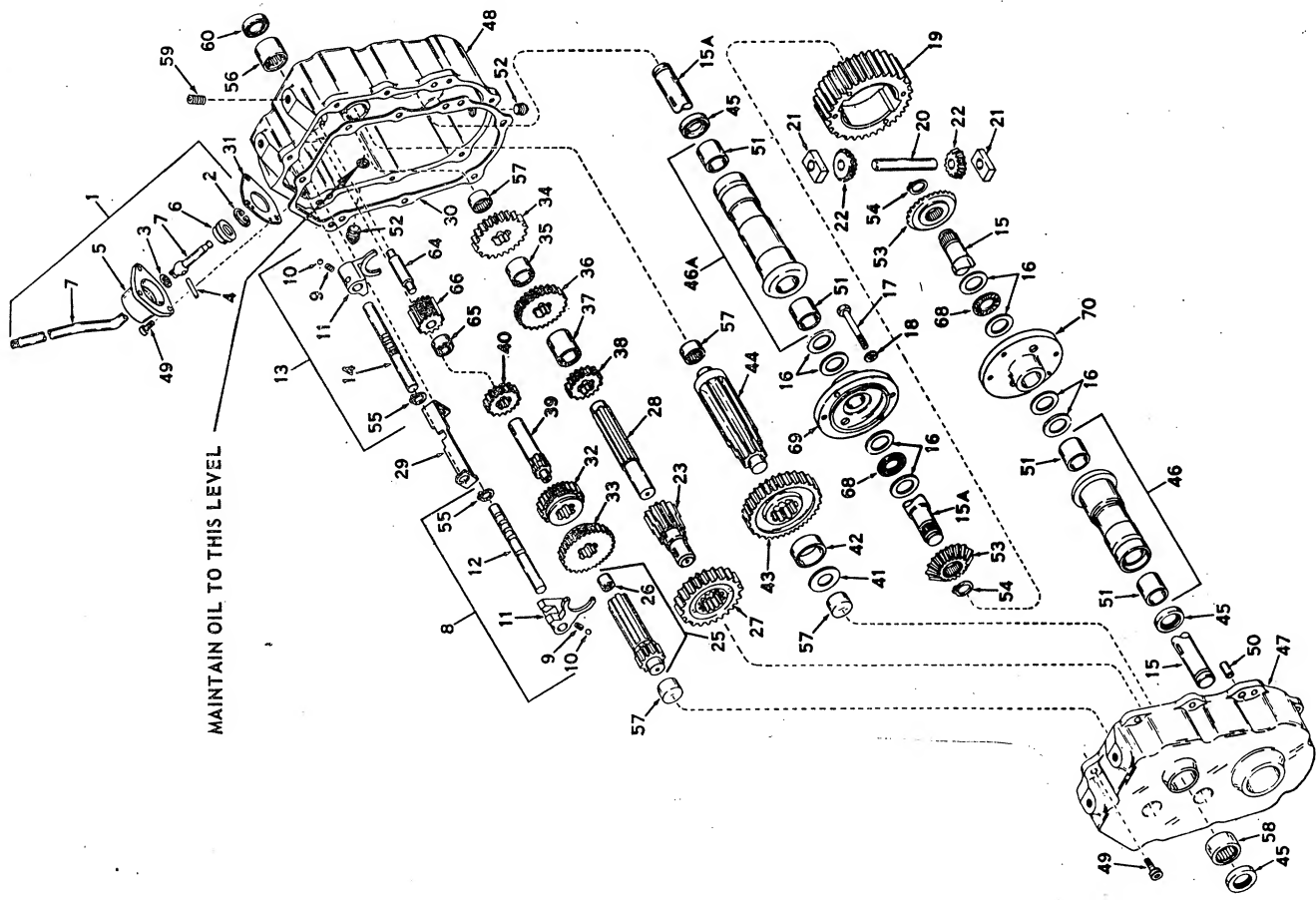
148-650, -655, -658, -659, -660, -665, -668, -669

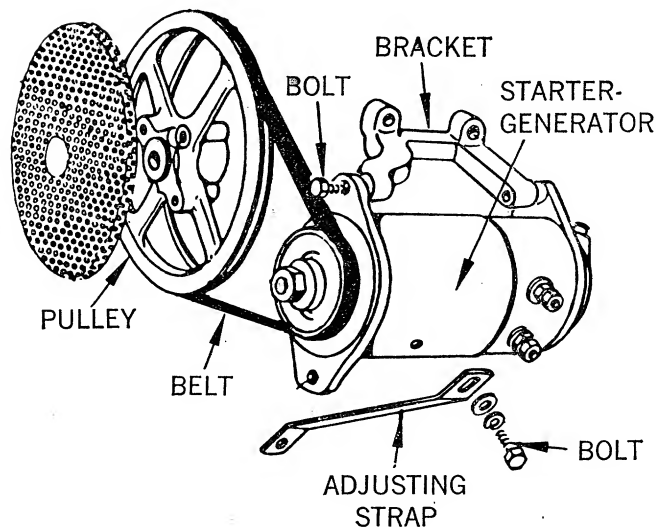
| Illus. No. | Part No. | DESCRIPTION | Illus. No. | Part No. | DESCRIPTION | Illus. No. | Part No. | DESCRIPTION |
|------------|----------|-----------------------------------|------------|----------|-----------------------------------|------------|----------|----------------------------------|
| 1 | 394-8805 | Steering Wheel Assy. | 43 | 734-219 | Tube - Front 12.5 x 4.50-6 | 95 | 722-109 | Knob - Shift Red |
| 2 | 394-9398 | Dash Panel Assy. | 44 | 394-8609 | Axle Assy - Front Left Hand | 96 | 394-8616 | Guard Assy - Belt |
| 3 | 312-8535 | Seat Assembly | 45 | 737-107 | Grease Fitting, Alemite 3005 | 97 | 726-110 | Push Cap † |
| 4 | 723-143 | Seat Cushion (not shown) | 46 | 711-209 | Tie Rod | 98 | 736-300 | Flat Washer |
| 5 | 723-146 | Seat Spring | 47 | 394-8614 | Pivot Bar Assy | | | 3/8 ID x 7/8 OD x 16 Ga. * |
| 6 | 710-216 | Hex Head Cap Screw | 48 | 712-711 | Hex Jam Nut 3/8-24 Thd. * | 99 | 305-8818 | Grip † |
| 7 | 736-169 | 3/8-16 x 3/4 lg. * | 49 | 710-298 | Hex Hd. Bolt 5/8-18 x 3-1/2 lg. * | 100 | 732-156 | Compression Spring † |
| 8 | 750-124 | Spring Lockwasher 3/8 Scr. * | 50 | 394-8608 | Axle Assy - Front - Right Hand | 101 | 394-8642 | Left Handle Assy † |
| 9 | 712-429 | Spacer Tube † | 51 | 312-8783 | Hub Assy RB 11526 | 102 | 736-133 | Flat Washer |
| 10 | 395-8695 | Hex Elastic Nut 5/16-24 Thd. * | 52 | 710-255 | Truss Head Machine Screw | | | 7/16 ID x 1-3/8 OD x 14 Ga. * |
| 11 | 310-8622 | Fender Left Hand | | | 1/4-20 x 3/4 lg. * | 103 | 395-8694 | Fender - Right Hand |
| | | Brake Assy - complete | 53 | 395-8670 | Grill Panel - Front | 104 | 710-444 | Hex Head Cap Screw |
| | | 5/16-18 x 3/4 lg. * | 54 | 310-8674 | Grill Screen | | | 5/16-18 x 1 lg. * |
| 12 | 394-8597 | Sems Hex Head Cap Screw | 55 | 395-8680 | Top Hood Assy | 105 | 712-384 | Hex Centerlock Nut 1/2-13 Thd. * |
| 13 | 711-205 | Frame Plate Assy | 56 | 723-153 | Gas Hose 10-1/2 lg. Rubber | 106 | 756-118 | Pulley |
| 14 | 714-113 | Brake Disc. | 57 | 723-154 | Gas Filter Carter FN-3630-S | 107 | 710-113 | Hex Head Cap Screw |
| 15 | 502-9262 | Hi Pro Key HP #708 * | 58 | 723-157 | Hose Clamp 1/2 OD - Eaton R8 | | | 3/8-24 x 1-5/8 (Heat Treat) * |
| | | Wheel Rear -16.00 x 6.50 complete | 59 | 723-152 | Gas Hose 1-1/2 lg. Rubber | 108 | 756-117 | Flat Idler |
| | | Rim Only | 60 | 723-159 | Gas Valve Dexter | 109 | 756-116 | Shoulder Bolt |
| | | Tire 16.00 x 6.50 Only | 61 | 723-149 | Gas Tank | 110 | 756-116 | V-Idler |
| | | Tube 16.00 x 6.50 Only | 62 | 723-151 | Strap - Gas Tank | 111 | 736-300 | Flat Washer |
| 16 | 734-253 | Snap Ring Truarc 5100-100 * | 63 | 394-8638 | Battery Box Assy | | | 3/8 ID x 7/8 OD x 16 Ga. * |
| 17 | 716-102 | Hi Pro Key HP #606 * | 64 | 394-8602 | Steering Housing Assy | 112 | 712-430 | Hex Elastic Nut 3/8-16 Thd. * |
| 18 | 714-314 | Allen Set Screw Cup Pnt. | 65 | 710-188 | Allen Set Screw Cup Pnt. | 113 | 711-179 | Ferrule - Adjustable |
| | | 5/16-18 x 1/4 lg. * | 66 | 712-492 | 1/4-28 x 3/16 lg. * | 114 | 310-8664 | Belt Keeper |
| 19 | 717-125 | Transaxle Gear Box | 67 | 710-279 | Square Nut 1/4-20 Thd. * | 115 | 756-440 | Engine Sheave |
| 20 | 710-179 | Hex Head Thd. Cut. Screw | | | Phillips Fillister Hd. Mach. | 116 | 312-8689 | Hex Head Cap Screw |
| 21 | 736-222 | 1/4-20 x 1/2 Type F * | 68 | 710-253 | Hex Hd. Cap Scr. 3/8-16 x 1 lg. * | 117 | 710-285 | Belt Trapout Brkt. Assy |
| 22 | 710-209 | External Lockwasher 1/4 Scr. * | 69 | 732-155 | Extension Spring | | | 1/2-20 x 3-3/4 lg. * |
| | | Sems Hex Head Cap Screw | 70 | 710-385 | Carriage Bolt 1/2-13 x 1 lg. * | 118 | 736-114 | Lockwasher 1/2 Screw * |
| | | 3/8-16 x 5/8 lg. * | 71 | 710-473 | Truss Head Machine Screw | 119 | 714-114 | Square Key 1/4 sq. x 2 lg. * |
| 23 | 394-8644 | Pivot Mounting Bracket | | | 10-24 x 1/2 lg. * | 120 | 754-112 | V-Belt 21/32 x 80 lg. * |
| 24 | 711-207 | Lock Handle | 73 | 712-147 | Speed Nut 10-24 Thd. * | 121 | 736-161 | Rubber Washer |
| 25 | 712-923 | Centerlock Jam Nut | 74 | 722-111 | Control Knob | 122 | 710-122 | Hex Head Cap Screw |
| | | 5/8-18 Thd. * | 75 | 746-126 | Throttle Control (complete) | | | 5/16-24 x 1 lg. * |
| 26 | 394-8589 | Frame Sub-Ass'y - Rear | 76 | 722-108 | Knob - Hood Lock Black | 123 | 711-191 | Lock Pin |
| 27 | 711-206 | Ferrule - Brake Lock | 77 | 712-372 | Hex Centerlock Nut | 124 | 712-896 | Hex Elastic Nut 1/4-28 Thd. * |
| 28 | 711-203 | Brake Rod | 80 | | 5/16-18 Thd. | 125 | 748-108 | Bearing Flange |
| 29 | 711-220 | Hex Head Step Bolt | 81 | 394-8620 | Clutch Mount Brkt. Assy | 126 | 726-112 | Plug Button 5/8 Dia. |
| 30 | 736-148 | External Lockwasher 3/8 Scr. * | 82 | 723-155 | Gas Gauge | 127 | 726-113 | Plug Button 2-3/32 Dia. |
| 31 | 712-798 | Hex Nut 3/8-16 Thd. * | 83 | 310-9200 | Clutch Bracket | 128 | 717-127 | Spur Gear |
| 32 | 394-8599 | Steering Segment Assy | 84 | 736-463 | Fiat Washer | 129 | 715-247 | Roll Pin 3/16 Dia. x 1 lg. * |
| 33 | 726-106 | Push Cap 1/4 Dia. | | | 9/32 ID x 5/8 OD x 16 Ga. * | 130 | 736-123 | Flat Washer |
| 34 | 394-8618 | Reinforcement Brkt. Assy | 85 | 712-324 | Hex Elastic Nut 1/4-20 Thd. * | | | 11/32 ID x 1-1/2 OD x .06 * |
| 35 | 714-474 | Cotter Pin 1/8 Dia. x 3/4 lg. * | 86 | 712-267 | Hex Nut 5/16-18 Thd. * | 131 | 736-112 | Belleville Washer |
| 36 | 736-264 | Fiat Washer 5/16 S.A.E. * | 87 | 736-119 | Spring Lockwasher 5/16 Scr. * | 132 | 712-114 | 17/32 ID x 1-5/8 OD x 18 Ga. * |
| 37 | 743-386 | Collar | 88 | 736-607 | Ext. Lockwasher 5/16 Scr. * | 133 | 714-115 | Castle Nut 1/2-20 Thd. * |
| 38 | 712-116 | Hex Elastic Nut 3/8-24 Thd. * | 89 | 710-380 | Hex Head Cap Screw | 134 | 711-219 | Cotter Pin 1/8 Dia. x 1 lg. * |
| 39 | 723-156 | The Rod End | | | 5/16-18 x 1-3/4 lg. * | 135 | 310-8630 | Steering Column Rod |
| 40 | 312-8780 | Wheel Rim - Front | 90 | 312-8838 | Belt Guard | 136 | 750-125 | Index Bracket |
| | | Wheel Assy - complete | 91 | 711-218 | Clutch Rod | 137 | 716-102 | Sleeve |
| 41 | 502-8780 | Bearing - Flange | 92 | 394-8591 | Frame Sub-Ass'y - Front | 138 | 736-163 | Snap Ring |
| 42 | 712-181 | Hex Nut Top Lock 3/8-16 Thd. * | 93 | 394-8653 | Foot Pedal Assy | 139 | 312-9265 | Hub Assy - Rear Wheel |
| 43 | 734-218 | Tire - Front 12.5 x 4.50-6 | 94 | 310-8817 | Lift Handle Assy (complete) | 140 | 712-193 | Cone Nuts - Rear Wheels |

PARTS ILLUSTRATION FOR TRANSAXLE 717-125

148-650, 55-658, 659-660, 665-668, 669-674

| Ref. No. | Part No. | DESCRIPTION | Ref. No. | Part No. | DESCRIPTION |
|----------|----------|--|----------|----------|---|
| 1 | 784095 | Lever & Housing Ass'y (Includes Nos. 2 thru 7) | 34 | 778021 | Gear, Spur (26 Teeth) |
| 2 | 792016 | Ring, Snap | 35 | 786014 | Spacer |
| 3 | 792001 | Ring, Quad | 36 | 778022 | Gear, Spur (22 Teeth) |
| 4 | 792002 | Pin, Roll | 37 | 786015 | Spacer |
| 5 | 784088 | Housing, Shift Lever | 38 | 778023 | Gear, Spur (16 Teeth) |
| 6 | 784094 | Keeper, Shift Lever | 39 | 776015 | Shaft, Input |
| 7 | 784096 | Lever Shift | 40 | 778024 | Spur Gear, Input Shaft |
| 8 | 784056 | Rod Ass'y, Shift (Includes Nos. 9 thru 12) | 41 | 780001 | Washer |
| 9 | 792003 | Spring | 42 | 786017 | Spacer |
| 10 | 792004 | Ball, Steel | 43 | 778036 | Gear, Output |
| 11 | 784004 | Fork, Shifter | 44 | 778041 | Pinion, Output |
| 12 | 784057 | Rod, Shifter | 45 | 788008 | Seal, Oil |
| 13 | 784054 | Rod Assembly, Shift (Includes Nos. 9, 10, 11, 14 and 55) | 46 | 782022 | Hsg. & Bushing Ass'y, L.H. Axle (Includes No. 51) |
| 14 | 784055 | Rod, Shifter | 46A | 782023 | Hsg. & Bushing Ass'y, R.H. Axle (Includes No. 51) |
| 15 | 774067 | Axle w/2 Key Seats - L.H. | 47 | 772045 | Cover Assembly, Transaxle (Includes Nos. 57 & 58) |
| 15A | 774068 | Axle w/2 Key Seats - R.H. | 48 | 770033 | Case Assembly, Transaxle (Includes Nos. 56 & 57) |
| 16 | 780042 | Washer, Thrust | 49 | 792007 | Screw, Socket Head Cap 1/4-20 x 3/4 |
| 17 | 792020 | Screw, Hex Hd. Cap 1/4-20 x 2-1/4 | 50 | 786026 | Pin, Dowel |
| 18 | 792006 | Lockwasher, 1/4" | 51 | 780054 | Bushing |
| 19 | 778033 | Gear, Ring | 52 | 792010 | Plug, Pipe |
| 20 | 786019 | Pin, Drive | 53 | 778039 | Gear, Bevel |
| 21 | 786027 | Block Drive | 54 | 792018 | Ring, Snap |
| 22 | 778014 | Pinion, Bevel | 55 | 792017 | Ring, Snap |
| 23 | 776022 | Pinion & Bushing Ass'y, Idler | 56 | 780011 | Bearing |
| 25 | 776014 | Shaft & Bearing Ass'y, Shifter (Includes No. 26) | 57 | 780013 | Bearing |
| 26 | 780018 | Bearing | 58 | 780055 | Bearing |
| 27 | 778037 | Gear, Idler | 59 | 792012 | Screw, Socket Head Set 3/8-16 x 3/8 |
| 28 | 776032 | Shaft, Idler | 60 | 788009 | Seal, Oil |
| 29 | 784074 | Stop, Shifter | 64 | 776008 | Shaft, Reverse Idler |
| 30 | 788026 | Gasket, Case to Cover | 65 | 786008 | Spacer, Reverse Idler |
| 31 | 788003 | Gasket, Shift | 66 | 778016 | Idler, Reverse |
| 32 | 778019 | Lever Housing | 68 | 780039 | Bearing, Thrust |
| 33 | 778020 | Gear, Shifting | 69 | 774029 | Carrier, Differential |
| | | | 70 | 774028 | Carrier, Differential |





STARTER - GENERATOR BELT ADJUSTMENT:

After the first ten hours of operation and periodically thereafter, the belt should be tightened or checked on the starter-generator. If the starter-generator turns over and the engine does not crank or there is a high pitched squeel when the starter-generator is turned on, it is an indication of a loose belt. To tighten, LOOSEN the two bolts on the bracket and LOOSEN the two bolts on the adjusting strap. Swing the starter-generator away from the engine, towards the rear of the mower, until the belt is tight. (Belt should deflect $\frac{1}{4}$ " when depressed with your thumb.) Tighten all bolts.

INSTRUCTIONS FOR ACTIVATING DRY CHARGED BATTERIES

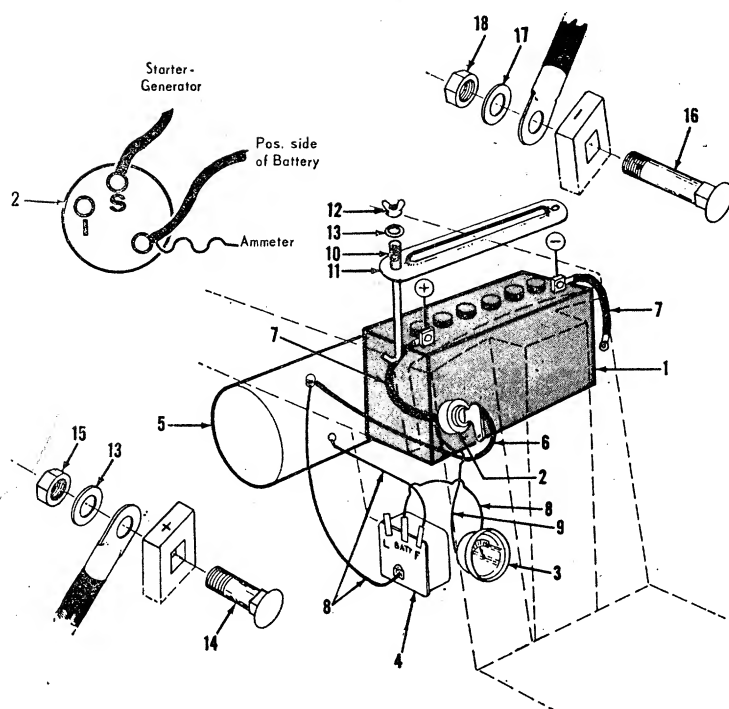
1. Place battery to be filled on bench or workbench. Never activate battery in tractor. Remove vent plugs from all cells.
2. Fill each cell carefully using battery grade 1.250-1.265 specific gravity Sulfuric Acid to $\frac{3}{8}$ " above the top of the separators or to the split ring.
3. Allow battery to set for 20 minutes. Battery can then be installed, however, to have maximum capacity the battery should be placed on a charger after the 20 minutes setting period. Battery can be charged at maximum of 35 amperes until the specific gravity reading is 1.265-1.275.
4. The battery should be checked with a hydrometer after every 25 hours of operation. If the specific gravity is less than 1.225 remove battery and recharge.
5. The battery should be kept clean. Any deposits of acid should be neutralized with soda and water. Be careful not to get this solution in the cells. Coat the terminals with a thin coat of grease.
6. If the battery is not going to be used in the winter, remove the battery and store in a cool, dry place. Do not store directly on a concrete floor as this will drain the battery. Recharge whenever the specific gravity is less than 1.225.

CAUTION

Since battery acid is corrosive to metals, do not pour into any sink or drain. Rinse empty electrolyte containers and mutilate before discarding. If acid is accidentally spilled on battery during filling or charging, or on bench or clothing, etc., flush off with clear water and neutralize with soda or ammonia solution.

ILLUSTRATION AND PARTS LIST FOR 12 VOLT ELECTRIC SYSTEM FOR 7 h.p. GARDEN TRACTOR

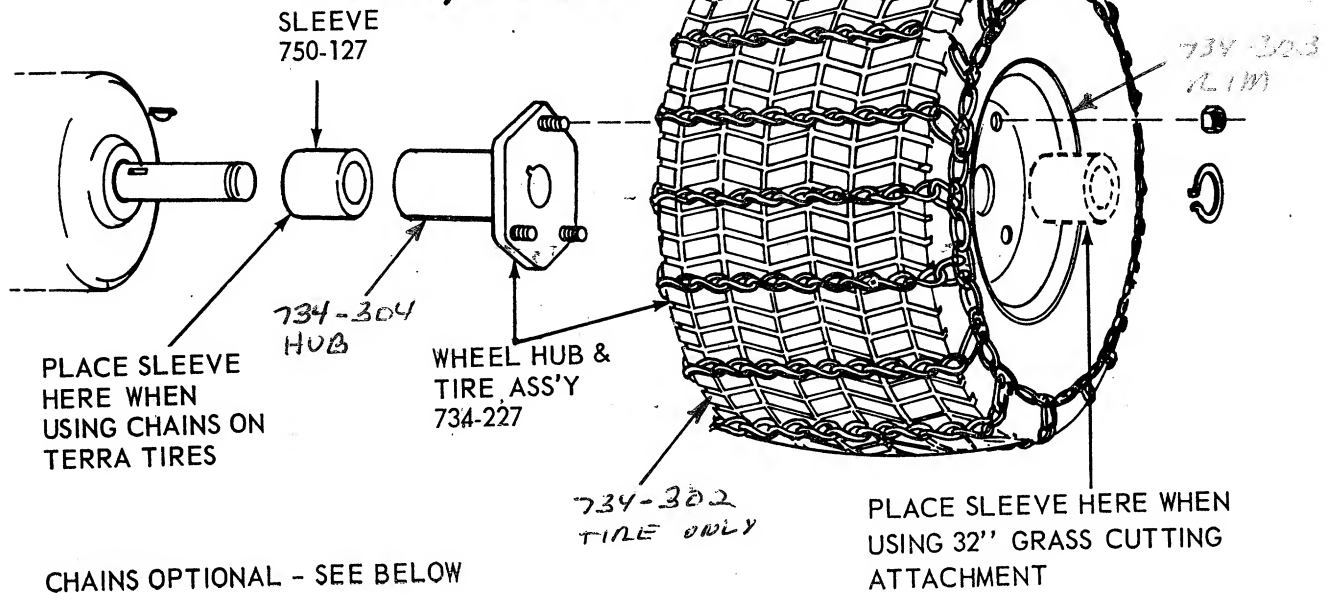
Models 148-660, 148-665, 148-669, 148-668



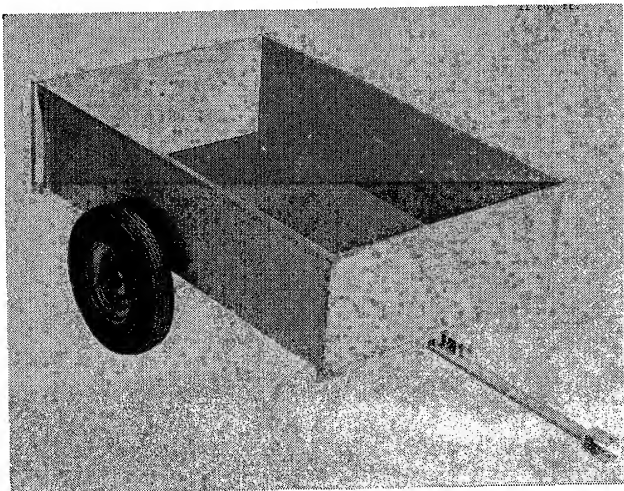
| Ref. No. | Part No. | DESCRIPTION | Ref. No. | Part No. | DESCRIPTION |
|----------|----------|--|----------|----------|---------------------------------|
| 1 | 725-117 | Battery - Willard Model No. HDDLM9L 7-3/4 x 5-5/32 x 7-11/32" 32 Amp Hrs. | 10 | 711-222 | Battery Hold Down Rod |
| 2 | 725-118 | Switch - Cole Herse 95511B | 11 | 321-8821 | Battery Hold Down |
| 3 | 725-119 | Ammeter - Stewart Warner D-357-W | 12 | 712-113 | Wing Nuts |
| 4 | 725-120 | Regulator - Delco-Remy | 13 | 736-329 | Spring Lockwasher 1/4" |
| 5 | ---- | Starter - Generator - See Engine Manual | 14 | 710-134 | Carriage Bolt 1/4-20 x 5/8 lg. |
| 6 | 725-121 | Electric Wire 17.25" | 15 | 712-287 | Hex Nut 1/4-20 Thd. |
| 7 | 725-122 | Electric Wire 7.25" (2 req'd) | 16 | 710-260 | Carriage Bolt 5/16-18 x 5/8 lg. |
| 8 | 725-123 | Electric Wire 14 Ga. 9.50" (3 req'd) | 17 | 736-119 | Spring Lockwasher 5/16" |
| 9 | 725-124 | Electric Wire 14 Ga. 3.5" | 18 | 712-267 | Hex Nut 5/16-18 Thd. |
| | | | | 725-128 | Key - Ignition Switch |

TERRA TIRES

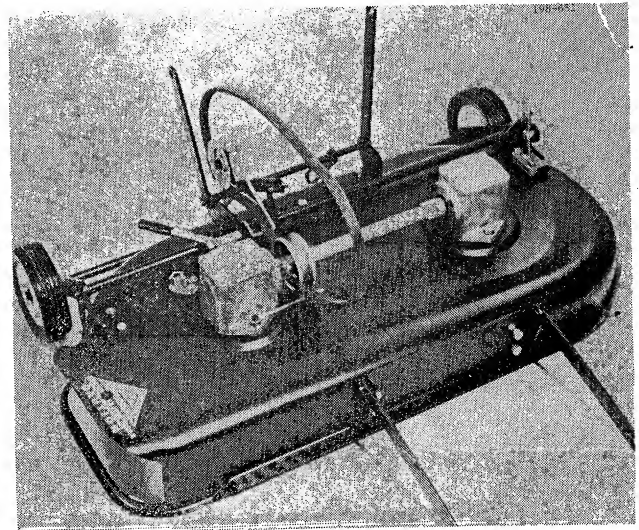
Models 148-655, 148-665
148-658, 148-668



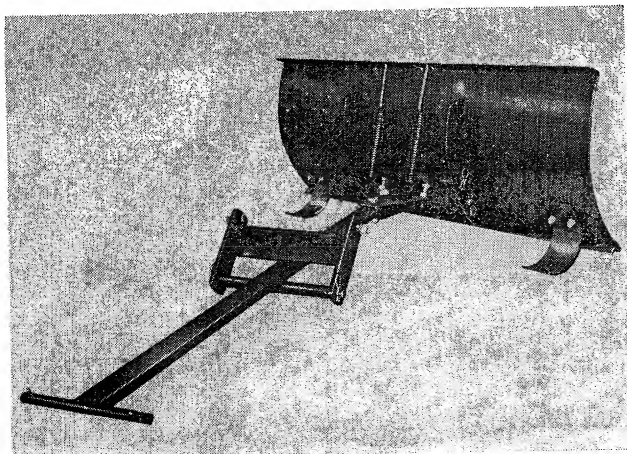
OPTIONAL EQUIPMENT



10 C. FT. TRAILER 198-653



32" CUTTING UNIT 198-651



42" SNOW BLADE 198-652

- REAR CHAINS - STANDARD TIRE
- 16.00 x 6.50 - 198-654
- REAR CHAINS - TERRA TIRE
- 18.00 x 9.50 - 198-656
- TERRA TIRE KIT - 198-657